REMARKS

Claims 1-23 were examined and stand rejected. Applicants amend claims 1, 9, and 14. Applicants assert that the amendments are supported at page 6 lines 8-9, normalization shifter 326 of Figure 3, page 7 lines 5-6, and block 430 of Figure 4 of Applicant's specification as originally filed and that no new matter is added herein. Applicants respectfully request reconsideration of pending claims 1-23, as amended, in view of at least the following remarks.

I. Claims Rejected Under 35 U.S.C. §103

The Patent Office rejects claims 1-23 under 35 U.S.C. §103(a) as being unpatentable over Applicants' admission of prior art disclosed in Figure 1 of the instant application ("APA") in view of Quach, et al. "An Improved Algorithm for High-Speed floating-Point Addition" ("Quach").

Independent Claims 1 and 9

Applicants respectfully disagree with the above rejection of independent claims 1 and 9, and submit that amended claims 1 and 9 are patentable over the cited references for at least the reason that the cited references do not teach "a normalization shifter coupled to an output of the multiplexor and the LZA," in accordance with amended independent claims 1 and 9.

First, the APA teaches normalization shifter 110 coupled to an output of adder 106 and leading zero anticipator 108 (see Figure 1 and page 4, lines 19-21 of Applicant's specification).

Consequently, the Patent Office has not identified and Applicants are unable to find any description in the APA of a normalization shifter coupled to an output of the multiplexor, as required by amended independent claims 1 and 9.

Second, Quach teaches reducing the steps and clock cycles necessary to perform a floating-point addition algorithm by combining and/or removing steps required by

calculating Cin based on a mathematical theory of a floating-point addition where Cin selects results of the "g" path or the "l" path (see Quach, page 3). Specifically, Quach teaches an algorithm where normalizing is either required prior to selection of the "g" path or the "l" path (see Quach Table 2 "$d \leq 1$ and Effective Subtraction" column), or where normalizing is not required because it is mutually exclusive with alignment path (see Quach page 2 section "3", page 3 second and third paragraphs, and Tables 1 and 2 "Others" column). For example, at page 3, lines 7-10, Quach states:

In the IEEE *round to nearest* (*RTN*) mode, computing $A+B$ and $A+B+1$ is sufficient to account for all the normalization possibilities to be discussed below. By selecting the results using C_{in} computed based on the lower order bits of the significands, complementation and rounding can be done simultaneously, saving one addition step. [emphasis added]

Therefore, Quach teaches normalization prior to the "select" step (see Quach Tables 2 and 3, page 2 section "3", and page 3 second and third paragraphs).

On the other hand, the Patent Office has not identified and Applicants are unable to find any description in Quach of a normalization shifter coupled to an output of the multiplexor, as required by amended independent claims 1 and 9.

Hence, for the first reason that neither the APA, Quach, nor the combination teach the above quoted limitation of amended independent claims 1 and 9, Applicants respectfully request that the Patent Office withdraw the rejection of amended independent claims 1 and 19 as being unpatentable over the APA and Quach under 35 U.S.C. §103(a).

Moreover, Applicants submit that the APA can not be properly combined with Quach because the combination would render Quach unsatisfactory for its intended purposes of reducing the steps and clock cycles necessary to perform a floating-point addition algorithm by combining and/or removing steps (see Quach, page 3). Similarly, the combination would render the APA unsatisfactory for its intended

purposes of reducing the steps and clock cycles necessary to perform a floating-point multiplication by combining and/or removing steps (see page 2, lines 19-24 and page 5, lines 14-19 of Applicant's specification)

For example, direct use of Quach 's work is not able to handle floating point multiplication and accumulation (FMAC) of the APA without additional steps because Quach's floating point addition teachings assume the significants of the 2 inputs (A, B) are normalized and with that assumption, then shows that (A+B), (A+B+1) and (A+B+2) are sufficient to provide results that may be selected to provide for floating point addition of two numbers. However, in FMAC application of the APA, A*B+C, A*B may yield a result greater than or equal to 2 (e.g., such as, 1.1 * 1.1 = 10.01), which is not normalized after being selected and therefore would require additional steps to normalize the multiple of A*B.

Therefore, Quach and the APA would be rendered unsatisfactory for their intended purposes of combining steps and reducing the steps and clock cycles necessary to perform a floating-point addition and multiplication algorithms (see MPEP §2143.01 and MPEP Section 2145.X.D).

Hence, for the second reason that the APA can not be properly combined with Quach, Applicants respectfully request that the Patent Office withdraw the rejection of amended independent claims 1 and 19 as being unpatentable over the APA and Quach under 35 U.S.C. §103(a).

Dependent Claims 2-8 and 10-13

Applicants submit that dependent claims 2-8 and 10-13 being dependent upon allowable amended base claims 1 and 9, are patentable over the cited references for the reasons explained above. Thus, Applicants respectfully request that the Patent Office withdraw the rejection of dependent claims 2-8 and 10-13 under 35 U.S.C. §103(a) as unpatentable over the cited references.

Independent Claim 14

Applicants respectfully disagree with the above rejection of independent claim 14, and submit that amended independent claim 14 is allowable for at least the following two reasons: (1) the cited references do not teach or suggest "the means for selecting outputting a result from one of the first means for adding, the second means for adding, and the third means for adding responsive to the means for controlling; and a means for normalizing coupled to an output of the means for selecting and the means for determining," as required by amended independent claim 14; and (2) that a proper motive to combine the cited references has not been provided in accordance with MPEP §2143.01.

An analogous discussion to that made above with respect to independent claims 1 and 9 applies here. Thus, Applicants respectfully request that the Patent Office withdraw the rejection of amended independent claim 14 under 35 U.S.C. §103(a) as being unpatentable over the cited references for at least the reasons noted above with respect to claims 1 and 9.

Dependent Claims 15-16

Applicants submit that dependent claims 15-16, being dependent upon allowable amended base claim 14, are patentable over the cited references for the reasons explained above. Thus, Applicants respectfully request that the Patent Office withdraw the rejection of dependent claims 10-19 under 35 U.S.C. §103(a) as unpatentable over the cited references.

Independent Claims 17 and 21

Applicants respectfully disagree with the above rejection of independent claims 17 and 21, and submit that amended independent claims 17 and 21 are allowable for at least the following two reasons: (1) the cited references do not teach or suggest "selecting one of the first result, the second result and the third result responsive to a rounding mode and the decimal point position as a selected result; and normalizing the

selected result based on the decimal point position," as required by independent claims 17 and 21; and (2) that a proper motive to combine the cited references has not been provided in accordance with MPEP §2143.01.

An analogous discussion to that made above with respect to independent claims 1 and 9 applies here. Thus, Applicants respectfully request that the Patent Office withdraw the rejection of amended independent claims 17 and 21 under 35 U.S.C. §103(a) as being unpatentable over the cited references for at least the reasons noted above with respect to claims 1 and 9.

Dependent Claims 18-20 and 22-23

Applicants submit that dependent claims 18-20 and 22-23, being dependent upon allowable amended base claims 17 and 21, are patentable over the cited references for the reasons explained above. Thus, Applicants respectfully request that the Patent Office withdraw the rejection of dependent claims 18-20 and 22-23 under 35 U.S.C. §103(a) as unpatentable over the cited references.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending (1) are in proper form, (2) are neither obvious nor anticipated by the relied upon art of record, and (3) are in condition for allowance. A Notice of Allowance is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly, extension of time fees.

Respectfully submitted,
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Dated: February 19, 2004

By _____
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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office, Commissioner for Patents, Post Office Box 1450, Alexandria, Virginia 22313-1450, on February 19, 2004.

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Jean Svoboda